OUTLINE SHEET 1-5-1
Logs and Records

A. Introduction

Logs and records are used to document important events. Some logs and records are required by law. In this topic, you will be taught how to fill out a cold iron log.

B. Enabling Objectives

1.16 **FILL OUT** watch station record, given a log, sequence of events and a simulated gage panel.

1.17 **EXPLAIN** the purpose of engineering department legal and operating records.

C. Topic Outline

1. Introduction
2. Overview
3. Engineering Records Required by Law
4. Operating Records and Logs
5. Cold Iron Trainer Operational Log
5. Summary and Review
6. Assignment

ASSIGNMENT SHEET 1-5-2
Logs and Records

A. Introduction

This material is to be completed prior to the material being covered in class.

B. Enabling Objectives

Refer to enabling objectives in Outline Sheet 1-5-1.

C. Study Assignment

1. Read Fireman NAVEDTRA 12001 page 1-20 Cold Iron Watch
2. Read Information Sheet 1-5-3

D. Study Questions

1. What is the difference between an Engineer's Bell Book and the Engineering log?
2. When is a new cold iron log started?
3. What is the main purpose of the cold iron watch?
4. Who is/are allowed to make changes in the log?

INFORMATION SHEET 1-5-3
Logs and Records

A. Introduction

This information describes the types and functions of logs and records. It also contains the steps in maintaining logs and records.

B. Reference

Engineering Administration NAVEDTRA 12147
Fireman NAVEDTRA 12001
Naval Surface Forces Engineering Department Organization Manual
COMNAVSURFLANTINST 3540.14; COMNAVSURFPACINST 3540.13

C. Information

I. Logs and records are maintained to document important events and to record other required information.
   A. Logs can warn the operator of an impending problem or can help in troubleshooting an existing problem.
   B. They can also provide information needed to make reports to higher authority.

II. The two engineering records required by law are the Engineering Log and the Engineer's Bell Book.
   A. Both are legal records that may be given up only in obedience to a Navy court or board, or the Navy Department.
   B. In the event any parts of these records are removed from the ship, a photostatic copy certified as a true copy by the Engineer Officer must be kept in its place.
   C. Completed Engineering Log and Bell Book sheets may be destroyed 3 years after the date of last entries.

III. The Engineer's Bell Book is a record of all bells, signals, and other orders received by the throttleman regarding the movement of the ship's propellers.
   A. This log is maintained by the throttleman who is the person charged with maintaining the ordered speed.
   B. Entries are made in the Bell Book as soon as the order is received.
   C. A separate log is kept for each shaft.
   D. On newer ships, a bell logger record changes and provides an automatic printout each hour.

IV. The Engineering Log is a complete daily record that covers important events and data pertaining to the Engineering Department and the operation of the ship's propulsion plant.
   A. The log will show information such as:
      1. equipment operating

2. fuel, water, and lube oil on hand
3. miles traveled
4. ship's draft
5. casualties to equipment or personnel
6. any general information that affects the engineering plant

B. A continuation sheet is provided to allow for as many entries for the day.
C. The Engineering Log may not contain erasures.
D. When a correction is necessary, a single line is drawn through the original entry so that the original entry remains legible.
E. The correct entry is entered clearly and legibly. The correction is then initialed at the margin.
F. Only the person required to sign the log may make corrections, additions, or changes.

V. Operating records help ensure regular inspection of operating machinery and provide data for performance analysis.
A. Each major piece of machinery in the engineering plant is covered by an operating log.
1. Logs must be properly maintained and kept as a record.
2. Records are reviewed daily by the Division Officer and the Engineer Officer, as appropriate.
B. The log has a place to record important data about the piece of equipment covered by the log.
C. The log has the minimum and maximum readings allowed for normal operation. These readings will give a quick reference point for detecting abnormal operation.
1. Unexpected changes in readings must be investigated even if the reading is within the minimum and maximum readings allowed.
2. Readings outside the minimum and maximum allowed must be circled in red and reported to the watch supervisor.
3. Readings outside the minimum and maximum allowed must be annotated at the remarks section as to the cause and steps taken to remedy the situation.
D. The operating log is a daily log that runs from midnight to midnight.
1. Readings are normally taken every hour while the equipment is in operation.
a) Readings should be taken as close to the hour as possible.
b) If hourly readings are missed for any reason, a set of readings must be taken as soon as practicable.
c) Indicate in the remarks' section to the time the late readings were taken and the reason for the delay.
2. Readings should be taken on all operating equipment and on non-operating equipment where meaningful data can be obtained.

a) When readings are not taken, the reason should be noted in the space where the reading should have gone.
b) When a whole station is secured or if the equipment is secured for several hours, a single word “secured” should be used.
c) All spaces must be filled either with readings or notations.
d) When equipment is started, an individual set of readings should be recorded in the previous hour’s column and a note added to indicate when the unit was started and the readings taken.

3. No erasures will be made on the log.
   a) When a correction is required, a single line will be drawn through the original entry such that it remains legible.
   b) The correct entry must be made neatly and initialed.
   c) Only the watchstander required to sign the log is permitted to make corrections.

JOB SHEET 1-5-4
Logs and Records

A. Introduction

Engineering watchstanders maintain logs and records as part of daily routine. This exercise will help you be familiar with taking readings and maintaining a cold iron log.

B. Equipment The following equipment is required:

1. Cold Iron Trainer Watch Operational Log

C. References

1. Engineering Administration NAVEDTRA 12147
2. Fireman NAVEDTRA 12001
3. Naval Surface Forces Engineering Department Organization Manual
4. COMNAVSURFLANTINST 3540.14
5. COMNAVSURFPACINST 3540.13

D. Safety Precautions

None Applicable

E. Job Steps.

I. The Cold Iron Watch Trainer (CIWT) Operational Log is the log that you are going to use while at CIWT.
   A. Across the top are the systems, equipment, spaces, and indicating devices where readings must be logged.
   B. The minimum and maximum allowable readings are indicated along with the normal readings.
   C. The left side of the CIWT Operational Log contains the time of the readings.

II. As a classroom exercise, you are going to fill out the CIWT log.
   A. You are going to be shown a series of transparencies containing indicating devices that must be read and the readings logged along with the time of reading.
      1. Fill in today's date in the blank allotted in the upper right hand corner of the CIWT log.
      2. You have assumed the watch at 0530 today. Indicate the event at the appropriate box (04-08) as "0530 -- Assumed the watch." By this time, the 0500 readings would have already been taken.

3. You will take the 0600 readings just before 0600. The following equipment is on line:
   a) Fire and Flushing Pump
   b) Potable Water Pump.
4. Read #1 Fire and Flushing Pump suction pressure gauge. Indicate the reading at appropriate block. (The reading is 11”Hg.)
5. Read #1 Fire and Flushing Pump discharge pressure gage. Indicate the reading at appropriate block. (The reading is 105 psi.)
6. Sound Fire Pump Suction Tank. Convert the sounding to gallons and indicate the tank level in the appropriate block. (The water level is 864 gallons.)

B. You will do the next step on your own. If you are not sure what to write or where to log your readings, raise your hand. If you make any mistake, place a single line through the wrong entry and write the correct entry legibly.

1. Read #1 Potable Water Pump suction pressure gauge. Indicate the reading at appropriate block.
2. Read #1 Potable Water Pump discharge pressure gage. Indicate the reading at appropriate block.
3. Sound Potable Water Suction Tank A. Convert the sounding to gallons and indicate the tank level in the appropriate block.
4. Sound Potable Water Suction Tank B. Convert the sounding to gallons and indicate the tank level in the appropriate block.
5. LP Air Compressor is secured.
6. Oily Water Waste Separator is secured.
7. The bilge level by #1 Fire Pump is “2."
8. The bilge level by #1 Oily Water Waste Separator is “1."
9. The bilge level by the #1 Shaft Forward Shaft Alley is “1."
10. The bilge level by the #1 Shaft Aft Shaft Alley is “0."
11. The Cooling Water Reducing Station is secured.
12. Record the watchstation temperature reading at the appropriate blocks.
    a) Fire Pump
    b) Oily Water Waste Separator
    c) LP Air Compressor
    d) Shaft Forward Shaft Alley
    e) Shaft Aft Shaft Alley.
13. Do not take readings from the “Donut” and Oily Waste tank at this time.

C. At 0640, you were ordered to align and start #1 LP Air Compressor.

1. It was aligned and started at 0648. Make the entry “0648 - #1 LP Air Compressor started” at the appropriate block at the back of the log.
2. Take the 0700 readings just prior to 0700. On this round, readings will be taken from #1 LP Air Compressor in addition to all readings taken for 0600.
   a) LP Air Compressor oil pressure
   b) LP Air Compressor 1st stage air pressure
   c) LP Air Compressor 2nd stage air pressure
   d) Air Receiver air pressure
   e) Reducing Station inlet air pressure
   f) Reducing Station outlet air pressure
3. For the purpose of this exercise, all 0700 readings stayed the same as 0600 readings except for the following watchstation temperature readings:
   a) Fire Pump
   b) Oily Water Waste Separator
   c) LP Air Compressor
   d) Shaft Forward Shaft Alley
   e) Shaft Aft Shaft Alley